WORKSHOP

Introduction to Scientific Computing

Recent technological advancements in computer science, data analytics, and data management have resulted in the acquisition and storage of massive amounts of data across various disciplines. These collections do not reach their full potential unless they are analyzed thoroughly using information extraction, data mining, and knowledge discovery techniques. In this workshop series, we will introduce a comprehensive set of essential methods and approaches in data analytics and scientific computing.

This three-week series will include:

1. an introduction to Python and Jupyter notebooks;
2. an introduction to Shell scripts, data analysis and discovery, and machine learning using Python packages including NumPy, OpenCV, Pandas, and Plotly; and
3. an introduction to version control using GitHub.

Computing environments used during the workshop series include Google Collab and the Windows Subsystem for Linux (WSL).

After completion of the workshop series, participants will be able to integrate various scientific computing methods within their workflows to explore image data, extract meaningful patterns from numerical datasets, and perform preliminary analyses. These workflows can be generalized to multiple domains and across biological scales, from individual organismal parts to the whole organisms themselves. In addition, participants will learn the essentials of computing: data pre-processing, statistical analysis, machine learning, data visualization, collaboration, code sharing, and computing environments.

Workshop Presenters

Ariyan Zarei is a Ph.D. candidate in computer science at the University of Arizona. He is part of the PhytoOracle project.

Travis Simmons is a senior undergraduate student at the College of Coastal Georgia. He joined the University of Arizona's Pauli Lab as a virtual intern and is now a Research Data Support Specialist.

Emmanuel Gonzalez is a doctoral student in Dr. Duke Pauli's lab at the University of Arizona. He earned a bachelor's degree in biology from Pacific Lutheran University.

Nathan Hendler earned a bachelor's degree at the University of Arizona in geology. His graduate career led to data science, applying statistics and machine learning to large datasets.

April 8, 15, & 22, 2022

11:00 AM–1:00 PM
(Central Time, –5 GMT)

Limited attendance to 150 participants

You do not need to attend every week.

Purpose: Learn the basics of select computing environments and essential data analytics.

Register for this Zoom virtual workshop:
https://tinyurl.com/AG2PI-w11

Upon registration, you will receive a confirmation email with information about joining the meeting.

A recording will be available at a later date at: **www.ag2pi.org/**